

User Manual



DSA-2102SAE

Network Digital Signage Player

Trusted ePlatform Services



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- 5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

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Declaration of Conformity

CE

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This kind of cable is available from Advantech. Please contact your local supplier for ordering information.

CE

This product has passed the CE test for environmental specifications. Test conditions for passing included the equipment being operated within an industrial enclosure. In order to protect the product from being damaged by ESD (Electrostatic Discharge) and EMI leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

FCC Class A

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Class B

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FΜ

This equipment has passed the FM certification. According to the National Fire Protection Association, work sites are classified into different classes, divisions and groups, based on hazard considerations. This equipment is compliant with the specifications of Class I, Division 2, Groups A, B, C and D indoor hazards.

Technical Support and Assistance

- Visit the Advantech web site at www.advantech.com/support where you can find the latest information about the product.
- Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:
 - Product name and serial number
 - Description of your peripheral attachments
 - Description of your software (operating system, version, application software,
 - A complete description of the problem
 - The exact wording of any error messages

Warnings, Cautions and Notes

Warning! Warnings indicate conditions, which if not observed, can cause personal injury!



Caution! Cautions are included to help you avoid damaging hardware or losing



There is a danger of a new battery exploding if it is incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Note!

Notes provide optional additional information.



Document Feedback

To assist us in making improvements to this manual, we would welcome comments and constructive criticism. Please send all such - in writing to: support@advantech.com

Safety Instructions

- Read these safety instructions carefully.
- 2. Keep this User Manual for later reference.
- 3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
- 4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
- 5. Keep this equipment away from humidity.
- 6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
- 7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.
- 8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
- 9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
- 10. All cautions and warnings on the equipment should be noted.
- 11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
- 12. Never pour any liquid into an opening. This may cause fire or electrical shock.
- 13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
- 14. If one of the following situations arises, get the equipment checked by service personnel:
 - The power cord or plug is damaged.
 - Liquid has penetrated into the equipment.
 - The equipment has been exposed to moisture.
 - The equipment does not work well, or you cannot get it to work according to the user's manual.
 - The equipment has been dropped and damaged.
 - The equipment has obvious signs of breakage.
- 15. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.
- 16. CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER, DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70 dB (A).

DISCLAIMER: This set of instructions is given according to IEC 704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

Safety Precaution - Static Electricity

Follow these simple precautions to protect yourself from harm and the products from damage.

- To avoid electrical shock, always disconnect the power from your PC chassis before you work on it. Don't touch any components on the CPU card or other cards while the PC is on.
- Disconnect power before making any configuration changes. The sudden rush of power as you connect a jumper or install a card may damage sensitive electronic components.

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Chapter

Introduction

1.1 Introduction

1.1.1 General Introduction

Advantech DSA-2101/2102 series consists of application-ready digital signage players with advanced playback capabilities. DSA-2101/2102 receives media contents such as video, graphics, and text, stores the content on its internal storage drive, and displays the contents according to either a pre-defined play-list or commands through network input. DSA-2101/2102 features the most advanced decoding and graphic processing function. It outputs either digital or analog video signals for modern, high definition display devices such as plasma, LCD, and projectors. It is the ideal networked digital content player for advertising, presentations, training, and other media applications.



1.2 Features of DSA-2101/2102 Series

- 1. Rich Content Presentation & Maximum Advertising Efficiency
 Advantech Digital Signage solutions support MPEG 1/2/4, DivX 5, MP3, etc. of
 video and audio formats, JPEG and BMP format for graphics display, and multiple language support for scrolling text. We offer user-definable layout templates
 with up to 7 display zones to deliver maximized advertising efficiency for our
 customers. Insertion of emergency events with user-defined priorities is supported along with versatile messaging.
- 2. Advanced Playback & Flexible Scheduling Capability
 Advantech Digital Signage solutions deliver premier display quality; both HDTV
 (16:9) and VESA (4:3) display format are supported. Apart from pre-scheduled events, instant scheduling is also supported for emergency event insertion.
- 3. Optimized Internal Storage Utilization and Content Management
 Advantech Digital Signage solutions are equipped with internal storage drive.
 The media content can be encrypted before transmission to ensure security and prevent viruses, worms, and spyware. Playback, operation, and transmission logs and reports are available for advertisement billing and error tracking.

1.3 Specifications

Table 1.1: Specifications					
Content Format Support	Content Format Support				
Video	MPEG-1, MPEG-2 MP @ ML o DiVX, MP3	up to 14 Mbps MPEG-4 ASP,			
Audio	2 channels, MPEG-1 and MPEG-2 Layers I, II and III (MP3), 16-bit PCM, bit rate up to 384 kbps, sample rate up to 48 kHz				
Graphic	32-bit color with transparency BMP, JPEG				
Text Banner	Variable scrolling speed and position				
Input and Output Interfa	ce				
Video Input	Composite	1 x RCA jack			
Audio Input	R / L channel analog	2 x Unbalanced stereo jack			
	DVI-I	1 x DVI-I			
Video Output	Composite	1 x RCA jack			
	S-Video	1 x Mini-DIN 4-pin			
Audio Output	R / L channel analog	2 x Unbalanced stereo RCA jack			
LAN Port	10/100 Mbps	1 x RJ 45			
Serial Port	RS-232C	1 x D-sub 9-pin (male)			
USB	USB 2.0	2 x USB Type A			
Network Protocol	Supports HTTP, DHCP				
System					
Internal Storage	4 GB Disk-on-Module				
Dimensions (W x H x D)	211 x 153 x 44 mm (8.3" x 6" x	1.7")			
	(not including mounting bracket	et and I/O connectors)			
Weight	Approx. 1.1 kg				
Power Consumption	Approx. 15 W				
Power	12 VDC input				
Operation Temperature	0 to 40°C, Humidity 5 ~ 85% @ 40°C				

Note!

Audio/Video input (AV-in) is optional function only available with DSA-2102V.



1.4 Front LED Indication

There are 2 LEDs on the front side of DSA-2102SAE for indication. See Figure 1.1. The function is described below.



Figure 1.1 Front LED Indication

LED	Description
Power	Keeping Light when power on
	Off in normal operation
Status Indication	Keeping Light when F/W upgrade with USB drive
	Light for 3 seconds when resetting to default configuration

1.5 Input/Output Interfaces

The rear side of the DSA-2102SAE unit with the following I/O ports is as shown below in Figure 1.2.

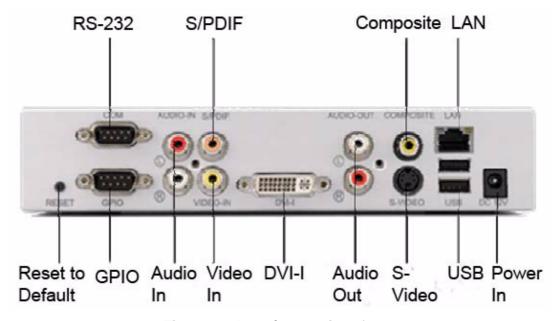


Figure 1.2 Input/Output interfaces

1.6 Packing List

The DSA-2102SAE package contains the following items:

	Items	Qty
1	DSA-2102SAE digital signage player	1
2	Switching power adaptor (Input AC 110-240V; Output DC 12V) and AC power cord	1
3	Mounting bracket, for fixing the player	2

Chapter

Player System Setup

2.1 Setting up the Player

Attach a video cable (DVI, video, S-video, or VGA) to your display

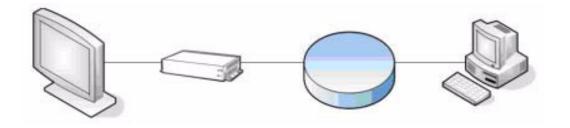
Connect and power on your display. Switch your display to the corresponding video input mode (VGA /Video/S-video/DVI/HDMI).

- If your display lacks DVI or HDMI and requires a VGA connection, a DVI to VGA is required.
- If your display has HDMI but not DVI, you can purchase an HDMI-DVI adapter or cable.
- For audio output, connect the supplied stereo RCA cable from the player to your monitor.

Connect player to your network

Connect player to your network router. Adfotain Manager Express can detect the IP location of your player automatically on a DHCP network. See setting up Adfotain Manager Express in this section to set up the program on your PC.

*If your network requires a static IP, you can also use Adfotain Manager Express to set up the static IP. Please contact your network administrator if you are unsure which IP addresses are available on your network.



Attach the AC power adapter to power on the unit



Connect the Power Adapter to a wall outlet and player.

The ? green power indicator on the player unit will immediately light up.

The player should display on screen information on your screen corners during boot up. Wait a few moments to let the process complete.

2.2 Setting up Adfotain Manager Express

Adfotain Manager Express lets you perform player configuration, maintenance, and scheduling operations from your PC.

Installation

Minimum system requirements

Windows Vista or Windows XP operating systems
1 GHz AMD or Intel CPU
DirectX 9
512 MB of system memory
One of the company of t

(higher versions and numbers also compatible)

PowerPoint 2003 or 2007 required for PowerPoint slideshow feature.

Windows Media Player 10 or 11 required for video previews.

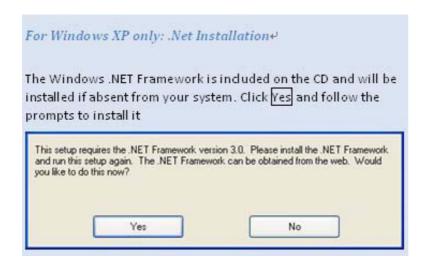
Setup process

Insert the Adfotain Manager Express CD and the installer should pop up automatically. If it does not start, click on "setup.exe" located on your CD using Windows Explorer. If you havenit installed .NET Framework, you will be prompted to do so. If it is already installed, please proceed to the next section.

- 1. Run the installer and follow the step by step instructions.
- 2. Close the installer to finish installation.

For Windows XP only: .Net Installation

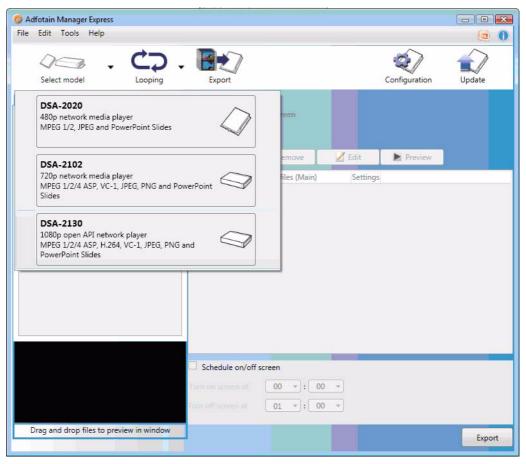
The Windows .NET Framework is included on the CD and will be installed if absent from your system. Click Yes and follow the prompts to install it



2.3 Configuration with Adfotain Manager Express

Setting the clock

Start Adfotain Manager Express and select player model

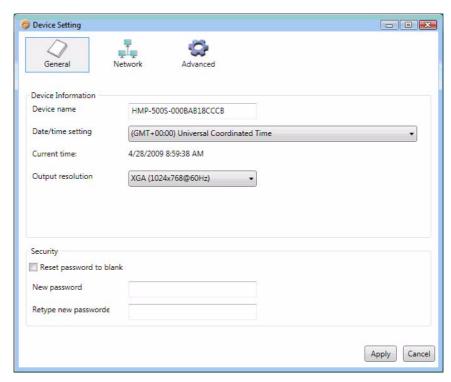


- 2. After selecting the player, click on the Configuration button on the top right.
- Click Auto-detect player button to locate all network-connected devices of the same model. A progress bar is shown, and players are added to a list of operational network devices. You can also stop the search once the target device appears in the list.



Green ●: player is online Red ●: previously detected but currently offline

- 4. Check the box preceding each target player and click Modify settings. You can configure more than one player at once.
- In the General Settings tab, confirm and select the appropriate time zone to ensure correct schedule playback. The time and date is automatically synchronized with your PC when you click Apply. Some options may not be available depending on your player mod

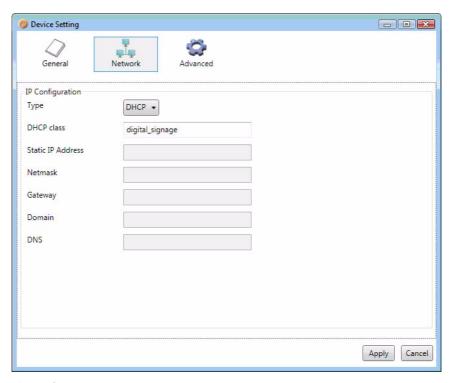


6. Set the device password. The device password protects contents from begin updated by unauthorized sources. You can either remove the password (check "Reset password to blank") or specify a new password for the player(s).

Setting the network identification

If you are using a DHCP network, please proceed to the next section.

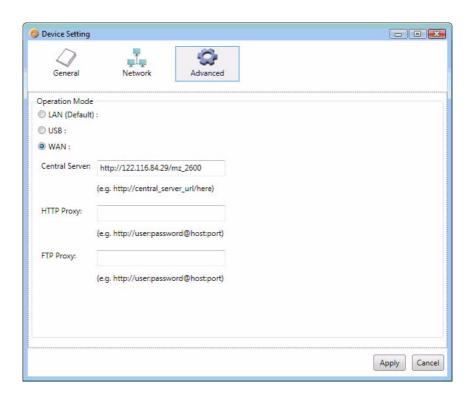
The network settings tab lets you specify the playeres static IP address and other settings. It's important that no two devices on the network share the same IP. Net mask, gateway, domain, and DNS can also be configured on this page. Please consult your network administrator if you are uncertain of the values to these settings.



Advanced settings

This page lets you change the management mode of the device.

- LAN mode (default): This allows local network management via Adfotain Man-1. ager Express.
- USB mode: This mode limits player content updates via USB drive or CF card 2. only.
- 3. WAN mode: reserved.



Chapter 3

Specifications Table

3.1 Specifications Table

Table 3.1: Specifications	Table
DSA-2102SAE	
Video format support	POPAI Screen Media Standards S6 (MPEG-1 SIF, 3Mbps CBR) S7 (MPEG-1 480p, 10Mbps CBR) S8 (MPEG-1 720p, 15Mbps CBR) S9 (MPEG-2 480p, 6Mbps CBR) S10 (MPEG-2 720p, 12Mbps CBR) E4 (VC-1/WMV9, MP@ML, 720p) E7 (MPEG-4 ASP, 480p, 10Mbps CBR)
Image format support	POPAI Screen Media Standards S1 (JPEG 480p baseline) S2 (JPEG 720p baseline) E1 (PNG 24bpp+alpha, 480p) E2 (PNG 24bpp+alpha, 720p)
Audio codec support	POPAI Screen Media Standards S4 (MPEG L2 audio) S5 (MP3 audio, 384Kbps)
Playback control	Alphabetical looping Adfotain playlist
Content management method	LAN ñ AdfotainÆ Manager Express USB direct update
Physical I/O connectors	DVI-I VGA (with DVI-to-VGA adapter) S-Video, composite RCA audio L/R Ethernet copper 10/100 BASE-T USB x 2
Local storage	4GB DOM
Accessories	DVI-to-VGA adapter RCA male-3.5mm female audio cable 3.5mm male-male audio cable Ethernet cable Wall-mount bracket VESA mounting kit (Optional)
Power requirement	12V, 2A DC
Power consumption	Typical* 5W
Environmental	Operating temperature: 0 to 40x C Humidity: 5 ñ 85% @ 40x C
Dimensions	211x153x 43 (mm) (excluding projections) 8.3 X 6 X 1.7 (inches) (excluding projections)
Weight	1.14kg 2.5lbs
Safety	UL-approved AC adapters
Certifications	CE/FCC RoHS
Warranty	One-year limited parts & labor

Appendix A

FAQ

What can I do to improve Adfotain Manager Express performance on my PC?

The latest Microsoft .NET 3.5 SP1 offers improved performance and bug fixes to Adfotain Manager Express. A copy of the installer is provided on the CD.

What is maximum file size for a single video file?

The maximum video file size for the DSA-2102 Media Player is 2GB. We recommend reserving a safety margin to avoid exceeding the limit (i.e. limiting files to 1850MB).

How to restore device back to factory defaults?

If you forgot the password or modified settings incorrectly, follow these steps to reset player:

- 1. Connect a USB drive to your PC and format it using FAT or FAT32 file system
- 2. Inside the USB drive, create a text file at the root level (not inside a folder)
- 3. Open the file in Text Editor and type in:
- reset_factory_default='yes'
- 5. Save the file as HMP.conf
- 6. Plug USB drive created in step 3 to the DSA-2102 Media Player to initiate restore.

How do I manage playback of my contents?

Playback on a schedule is one of the main functions of your DSA-2102 Media Player. It is managed via the easy to use Adfotain Manager Express software.

Unlike the difficulty of programming our VCRs from a remote control, the Adfotain Manager Express software is designed to be simple by leveraging the power of your personal computer. Anyone with basic computer skills can quickly create or modify schedules, delivering the right message to the right audience at the right times. Please refer to the Adfotain Manager Express User°Øs Manual for detailed operations and techniques.

Could the player display Flash or Microsoft PowerPoint presentations?

The player features limited PowerPoint support, but not Flash support.

While PCs can play many formats with varying degrees of success, RISC-based media players are designed to play a limited number of high quality video formats (Please see spec for details). While Microsoft PowerPoint native files could not play directly on a RISC-based player, the file is converted thru other software (i.e. Adfotain Manager Express) into an image format to be played as an image slideshow.

Why won't some media files play smoothly?

The video data bit-rate may be higher than the recommended bit rate.

The video data bit-rate is the amount of video or audio data used per second to store or play the contents, usually expressed in Mbps (mega-bits per second). Video encoded with excessive bit-rates will not playback smoothly in the media player, likely due to storage i/o bottlenecks. You can try recompressing unplayable video files at lower bit rates using the free and open source Handbrake tool at http://handbrake.fr/. Once you have found the right output settings for size and quality, save them in Handbrake profiles for future use. Then you can easily recompress any unplayable files you encounter in the future.

Why won't some media files play at all?

Even though the player conforms to leading industry standard video formats, sometimes the videos you acquire may fall outside the compatibility matrix.

If the files can play on your PC but not on your player, you should recompress the file to ensure playback. For greatest compatibility, we recommend outputting high definition content to the WMVHD format (8Mbps bit-rate). You can recompress unplayable video files with recommended file formats and bit rates using the free and open source Handbrake tool at http://handbrake.fr/. Once you have found the right output settings for size and quality, save them in Handbrake profiles for future use. Then you can easily recompress any unplayable files you encounter in the future.

The media playback looks different on a PC compared to the media player's screen. (Wrong aspect ratio)

There are 2 major aspect ratios (width-to-height ratios) for video content, but many kinds of displays. If you play 4:3 video on a 16:9 display (or vice versa), a circle becomes oval, and the picture takes on a squeezed or stretched look. To avoid this distorted look, adding black bars are a common technique.

The DSA-2102 can be configured to automatically add black bars for certain types of displays. You can set the output resolution in DSA-2102's browser configuration page to match the native resolution of your display.

Some JPEG images cannot be played in the media player.

Progressive JPEG are not supported. Please convert to baseline JPEG for compatibility.

JPEG images can be either of 2 types: baseline or progressive compression. Baseline JPEG offers greatest compatibility, while progressive JPEGs are suitable for web site images. Progressive images are downloaded and displayed "xprogressively," being rendered more clearly as more data is received over the internet. Dedicated devices using local storage are usually incompatible with the latter type. Make sure to save images as baseline JPEG in your photo editor, or resave them as baseline JPEGs using free tools such as Paint.net (http://www.paint.net/).

Does my media player support video streaming?

No, all media files are designed to play from local storage (HDD or internal CF card). During content and schedule sync, contents are transferred to player Øs local storage before being presented on screen. This ensures the best possible presentation and fluid delivery of your video message. Video streaming raises many playback quality issues such as image freezing, blocking, or blue-screens, costing you valuable "air time" and losing your audience's attention.

Could the media player be controlled by external input devices or interfaces?

No, unless specifically developed for.

Touch panel, bar code scanner, and motion sensors are popular input devices for PC based digital signage media players, but RISC based players require considerable effort to develop special hardware drivers for each I/O device.

The media player is not playing. What should I do?

Check the player's messages on the display (OSD, or on screen display) for status information.

Since RISC-based media player usually lack input devices such as keyboard or mouse like PCs, troubleshooting is usually based on user°Øs knowledge and experience with the specific media player. First check the on screen message and stats

reports. Bad play list and timing issues are two major causes of playback problems. To determine if the problem is caused by a bad play list, simply delete the play list and restart player. The player should loop through all media files, indicating a fault with the play list.

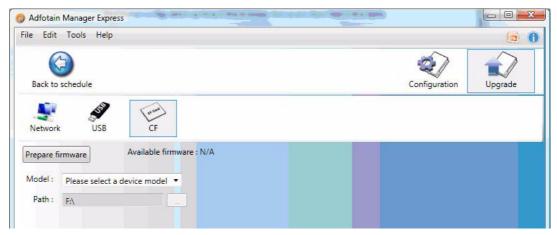
If the playback is scheduled to play at specific time, check to see if the device is set to the right time zone on the world clock. When nothing seems wrong, the time zone settings may be the reason the program is not played.

Appendix B

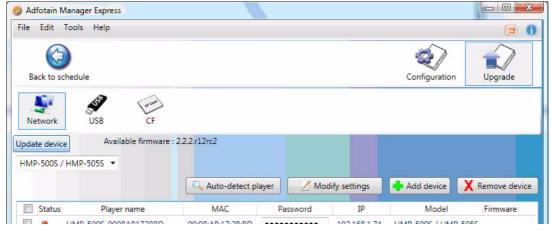
Firmware Upgrades

If you are using Adfotain Manager Express to manage existing media players, you may be prompted to upgrade the firmware to ensure to enable the latest scheduling features. Current versions of the firmware update files are included on the Adfotain Manager Express CD, while future upgrades may be obtained from your reseller.

B.1 Firmware upgrade using Adfotain Manager Express



- 1. Click "Upgrade" to enter the firmware upgrade page
- 2. Select an upgrade method: Network, USB, or CF card (not all methods are available for all models). You can also manually select the location of a firmware obtained from your reseller.



3. Select your player model. If the model is not shown, then choose another applicable upgrade method to proceed.



- 4. If you selected USB or CF card upgrade, you will need to specify the destination path of the drive or card. If you have set a password for our player, enter it in the Password field. Related instructions will be displayed on this page to help you complete the upgrade process.
- 5. Finally, click on the Update device or Prepare firmware button to begin transfer of firmware. If the firmware source file cannot be found, you will be asked to locate the firmware manually. The firmware should be available on your Adfotain Manager Express CD or via your reseller.



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